MSAPC ADVISORY CIRCULAR

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF AIR AND WASTE MANAGEMENT ● MOBILE SOURCE AIR POLLUTION CONTROL

A/C NO. 53 December 31, 1975 PAGE 1 OF 3 PAGES

SUBJECT: Air Conditioning Usage

A. Purpose

The purpose of this Advisory Circular is to clarify the requirements of the existing regulations concerning the usage of air conditioning as it relates to the determination of vehicle inertia weight, road load power, and test vehicle equipment.

B. Background

Manufacturers have reported numerous problems in interpreting the regulations concerning test vehicle equipment requirements, and calculations for vehicle weight and road load power, where air conditioning is concerned.

The basic issues are:

1. Part I Application Listing, i.e., vehicle curb and inertia weight.

2. Air conditioning equipment requirements for test vehicles.

3. Curb and inertia weight requirements for test vehicles.

4. Dynamometer road load factor for test vehicles.

The provisions governing the above issues are not located in the same section of the regulations, which may have led to some confusion.

This circular sets out the combined requirements of the applicable sections of the regulations to aid in determining test vehicle equipment requirements, and in calculating inertia weight and road load power where air conditioning usage is concerned. The requirements stated in this Advisory Circular are not new, and are herein being published to aid in understanding them. The applicable regulations are as follows:

1. For model year 1976:

40 CFR 85.002(a)(8).
85.075-5(g).
85.075-15(e)(3).

2. For 1977 and later model years:

F.R. (27590) June 30, 1975

§86.077-2(b).
§86.077-24(g).
§86.177-11(e)(3)

C. Applicability

The procedures outlined in this Advisory Circular are applicable to 1976 and later model year gasoline-fueled light-duty vehicles and light-duty trucks and Diesel light-duty vehicles and light-duty trucks.

D. Test Vehicle Selection Policy

1. EPA will not specify that a test vehicle of a configuration not available with air conditioning be equipped with air conditioning. In addition, a vehicle which will be produced standard with air conditioning, if specified as a test vehicle will always be specified to be equipped with air conditioning.

2. For the purpose of this Advisory Circular, configuration will be defined as a specific combination of: car line, engine displacement, engine code, transmission type and axle ratio.

3. Air conditioning is required to be on the test vehicle if so specified. Air conditioning shall not be included on any test vehicle unless specified by the Administrator.

E. The Influence of Air Conditioning on Vehicle Weight and Road Load Power

The basic issues related to air conditioning usage are addressed separately for each of the two following cases:

Case I - Over 33 percent of the vehicles in the engine family are projected to be sold with air conditioning.

Case II - 33 percent or less of the vehicles in the engine family are projected to be sold with air conditioning.

The attached flow chart (figure 1) will provide a basis for decisions on the issues in paragraph B with respect to air conditioning usage. A brief narrative discussion is also included to insure understanding of the regulations.

1. Case I - Over 33 percent of the vehicles in the engine family are projected to be sold with air conditioning.

   a. Part I Application - Vehicle curb and inertia weight listings will include the weight associated with air conditioning unless the vehicle is of a specific configuration not available with air conditioning.

b. Test Vehicle Weights - The weight associated with air conditioning will be added in all test vehicle curb and inertia weight calculations unless the vehicle is of a configuration not available with air conditioning.

c. Test Vehicle Road Load Power - The road load power for all test vehicles will include the 10 percent factor for air conditioning unless the vehicle is of a configuration not available with air conditioning.

2. Case II - 33 percent or less of the vehicles in the engine family are projected to be sold with air conditioning.

a. Part I Application - vehicle curb and inertia weight listings will not include the weight associated with air conditioning unless the vehicle is standard with air conditioning.

b. Test Vehicle Weights - The weight associated with air conditioning will not be added in any test vehicle curb and inertia weight calculations unless the vehicle is standard with air conditioning.

c. Test Vehicle Road Load Power - The 10 percent factor for air conditioning will not be included in the road load power for any test vehicle.

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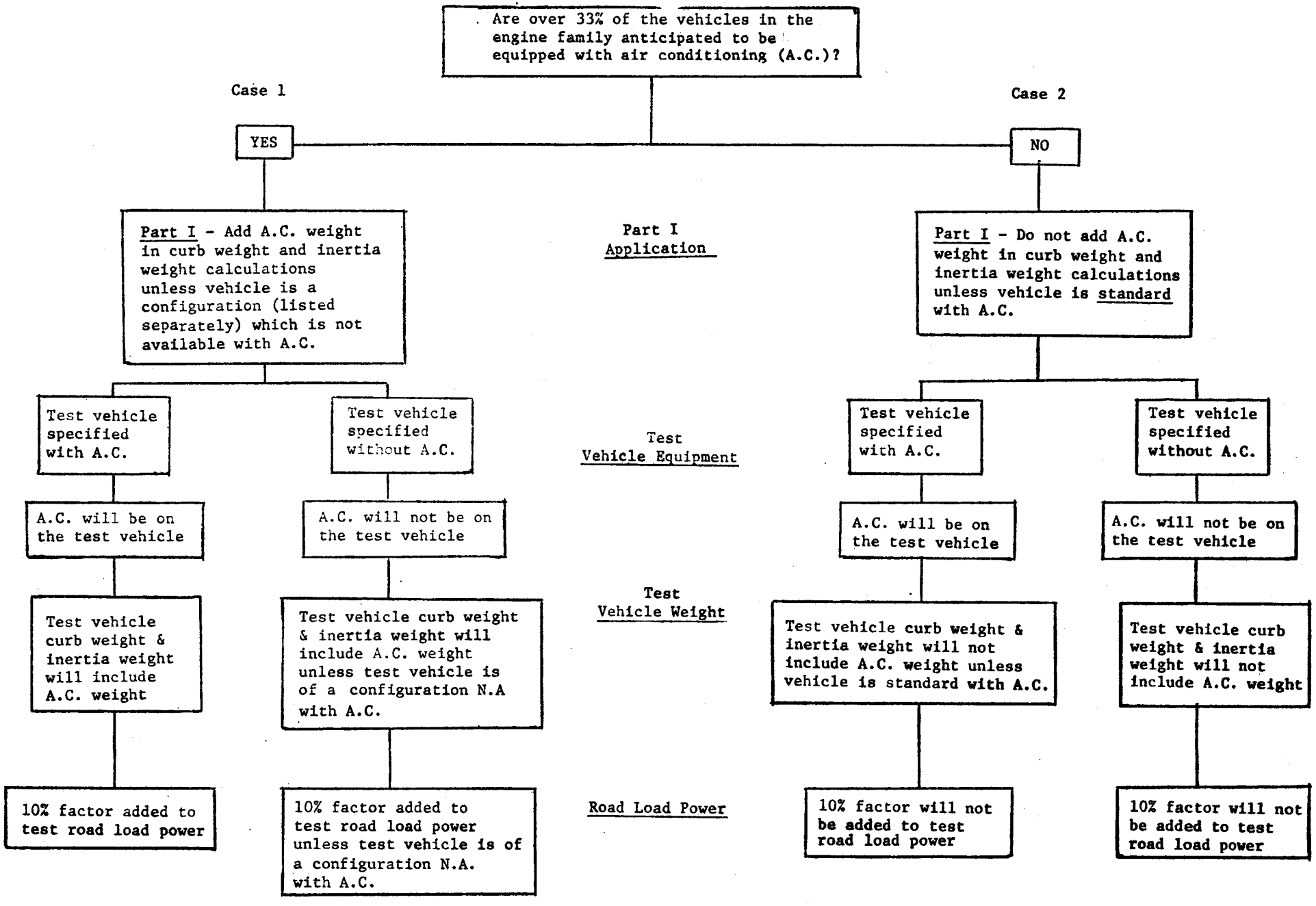
Are over 33% of the vehicles in the engine family anticipated to be equipped with air conditioning (A.C.)?
Case 1
YES
Case 2
NO
Part I - Add A.C. weight in curb weight and inertia weight calculations unless vehicle is a configuration (listed separately) which is not available with A.C.
Part I Application
Part I - Do not add A.C. weight in curb weight and inertia weight calculations unless vehicle is standard with A.C.
Test vehicle specified with A.C.
Test vehicle specified without A.C.
Test Vehicle Equipment
Test vehicle specified with A.C.
Test vehicle specified without A.C.
A.C. will be on the test vehicle
A.C. will not be on the test vehicle
A.C. will be on the test vehicle
A.C. will not be on the test vehicle
Test vehicle curb weight & inertia weight will include A.C. weight
Test vehicle curb weight & inertia weight will include A.C. weight unless test vehicle is of a configuration N.A with A.C.
Test Vehicle Weight
Test vehicle curb weight & inertia weight will not include A.C. weight unless vehicle is standard with A.C.
Test vehicle curb weight & inertia weight will not include A.C. weight
10% factor added to test road load power
10% factor added to test road load power unless test vehicle is of a configuration N.A. with A.C.
Road Load Power
10% factor will not be added to test road load power
10% factor will not be added to test road load power

Figure 1